

## ABSTRACT OF THE DISCLOSURE:

In response to a coded speech signal output from a speech coder, a speech decoder decodes the coded speech signal into a reproduction speech signal. If the reproduction speech signal meets predetermined conditions, for example, "silence", "unvoiced sound", and the like, the speech decoder further operates as the following. The speech decoder calculates spectral parameters based on the reproduction speech signal, and calculates an excitation signal on the basis of the reproduction speech signal and the spectral parameters. In the calculation, a level of the excitation signal is also obtained. The speech decoder smoothes in time at least one of the spectral parameters and the level of the excitation signal. The speech decoder synthesizes the excitation signal by using the synthesis filter constructed with the spectrum parameters, so as to reproduce the speech signal. The speech signal has an excellent quality even if a bit rate is low.

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